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ABSTRACT

In 1983 the Maryland State Department of Public Education (MSDE) issued a request for proposals for "The Development of the Score Reporting System for the Maryland Functional Testing Program." The MSDE called for a literature review, a national survey, a statewide survey of user needs and capabilities, an assessment of the state's report producing capability, and a final design for reports and a user's manual. Following a literature search, national and statewide surveys of reporting practices and information needs were conducted by Measurement Incorporated. Common and unique needs of district and building administrators, teachers and counselors, and parents and students were found. Using the nationwide search results, the information needs of students, parents, teachers, guidance counselors, principals, and district administrators in Maryland were surveyed. Score report design was based upon these studies emphasizing the accountability function of the tests. Four levels of reporting and seven content areas necessitated 28 separate score reports. Examples of four levels of reports (student, class, school, and local education agency) are presented. Each report is oriented to a specific audience, visual clutter is reduced, and diagnostic information is briefly presented. A user's guide provides thorough background on score interpretation at multiple levels. This score reporting system appears to meet the responsibilities and information needs of all its audiences. (PN)

ED269475

BUILDING A USER-ORIENTED STATEWIDE SCORE REPORTING SYSTEM

Michael B. Bunch
Measurement Incorporated

U.S. DEPARTMENT OF EDUCATION
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ABSTRACT

While most states and many local school districts have criterion referenced testing programs, little is known about how or why scores are reported. In revising one state's reporting procedures, we conducted national and statewide surveys of reporting practices and information needs. We found common and unique needs of district and building administrators, teachers and counselors, and parents and students. Using the results of the nationwide search, we surveyed the information needs of students, parents, teachers, counselors, principals, and district administrators in one state. Score report design was based upon both the national and statewide studies. User groups found the resulting 28 score reports to be helpful.

While previous studies had suggested that information provided by many score reporting systems is deficient in both quantity and quality, this study suggests that users are receiving as much information as they can absorb but that it is often not the right information. The score reports designed as a result of this study are quite brief and reflect the accountability function of the testing program. Procedures for interpreting results and obtaining additional diagnostic information are described.

Introduction

In 1983 the Maryland State Department of Public Education (MSDE) issued a request for proposals (RFP) for "The Development of The Score Reporting System for the Maryland Functional Testing Program." The RFP called for a literature review, a national survey, a statewide survey of user needs and capabilities, an assessment of the state's report producing capability, and a final design for reports and a user's manual. A contract to implement this project was ultimately awarded to Measurement Incorporated and its subcontractor RMC Research Corporation.

The results of the literature search and nationwide survey of criterion-referenced test score reporting were reported two years ago (Haenn, Bunch, and Mengel, 1984). Those results are briefly summarized here. While the literature on test score reporting is scant, some generalizations may be gleaned: 1) every score report should describe the testing program, 2) presentation of results should be audience specific, 3) each score report should contain cautions to observe in interpretation.

With regard to the first point, it is important that each score report recipient know why he or she is receiving the report. Reports should contain the purpose of the test, the name of the test (specific level, form, edition, etc.), standardization date, and administration date. Reports should also explain how and why results are to be used in language the recipient (audience) can comprehend.

Five levels of audience are identified: student (or parent), class, school, district, and state. At each level the psychometric and content sophistication levels are different. What is meaningful or relevant to one audience is not necessarily so to another. Score reports must be designed with this fact in mind.

Finally, since all school personnel and most parents have preconceived notions about meanings of test scores, there is a real danger that results will be misinterpreted. Producers of score reports need to explain their score metrics; this includes narrowing the range of permissible interpretations. Caveats and precise language are particularly important because most large scale testing programs are routinely reported by the news media.

With these three points in mind, we developed a set of questionnaires to assess the state of the art of score reporting in the fifty states. We paid careful attention to what Mills and Hambleton (1980) had considered important information needs for our five audiences. The end products were two questionnaires, one for state directors of testing and one for local directors.

We received responses from 28 out of 49 states (Maryland was excluded) and 27 out of 57 large districts. After a series of telephone follow-up interviews, only five states with statewide criterion-referenced testing programs were unaccounted for. Specific results were reported by Haenn, Bunch, and Mengel (1984).

We found that the typical score reporting system yielded only 20-30% of the items listed by Mills and Hambleton (1980). Some respondents who had no system reported on what they would like to see. Even these respondents endorsed only 40-50% of the items on the questionnaires.

Several states and districts supplied sample score reports or supporting materials. These included manuals, labels, guides, and one bilingual report form. We identified a number of desirable and possibly useful features for subsequent review by Maryland audiences.

Statewide Survey

In conducting the statewide survey, we wanted to answer three questions: 1) Who are the score report users? 2) What do they need to know? 3) How much do they understand about testing in general and about the Maryland Functional Testing Program in particular? To answer these questions, we surveyed over 1,000 individuals representing four of the five reporting levels mentioned earlier. At the same time we met with MSDE staff to determine technical and personnel capacity to produce a variety of score reports.

Sample

Maryland has 24 local education agencies (LEAs) and just over 500 secondary schools. Our survey included all 24 districts and 105 secondary schools. Table 1 shows the size and nature of the total sample.

Table 1
Sample Size by Audience

Audience	Sample
Superintendents	24
Assistant Superintendents	20
Project Basic Facilitators	24
Local Accountability Coordinators	24
Other Administrators	40
Principals	105
Guidance Counselors	105
Teachers	400
Students	200
Parents	200
TOTAL	1,142

A twenty percent random sample of all non-elementary schools yielded 105 schools, thus, 105 principals and guidance counselors. The number of superintendents and other district level administrators shown in Table 1 represents nearly a 100% sample of superintendents, assistant superintendents of instruction, Project Basic facilitators, local accountability coordinators,

and other administrators. Each administrative unit (23 counties and Baltimore City) was represented in each sample in proportion to its non-elementary school enrollment.

Questionnaires

Separate questionnaires were developed for district administrators, principals, counselors, teachers, parents and students. District Administrators received a one-page form requesting information about what is reported and what should be reported. Principals were asked to tell what kinds of information they needed. Specific items of information were listed and principals were asked to check those which they considered necessary.

Teachers and counselors were asked to rank items in terms of importance. They were also asked what they would be willing to do to obtain more or better information, given the fact that one or two hours of testing cannot yield detailed assessments of every instructional objective.

Parents and students received a one-page questionnaire with ten items. Their task was to select the five items they thought were the most important (e.g., statement telling you whether you passed or failed; topics you need to study).

Procedure

Upon approval by the MSDE, we mailed packets of materials to the 24 local superintendents of schools. Each packet contained the superintendent's questionnaire, a cover letter from State Superintendent David Hornbeck, a sample set of all additional questionnaires, and one or more school questionnaire packets. Each school packet was to be sent to principals by their customary method. Questionnaires to assistant superintendents and other local administrators were mailed separately.

Each school packet contained the principal's questionnaire, a cover letter, a sample set of parent, student, teacher, and guidance counselor questionnaires, and appropriate numbers of other questionnaires and related materials. Each questionnaire was accompanied by a plain white envelope with the type of questionnaire printed on the front. All correspondents were asked to return their questionnaires in the attached envelope to the school office. Principals were asked to place all returned envelopes in a larger stamped envelope addressed to RMC Research Corporation. Thus, effort by respondents was minimized.

Data Analysis

The primary form of analysis for the data obtained in this survey was frequency distribution. No attempt was made to cross tabulate within or across forms of audience or to correlate responses of one group with those of another. The reason for this approach is that many parts of the questionnaires required choices among viable features. Furthermore, it is unlikely that any report can or should do all things for all people. Therefore, some choices regarding features must be made. Only the most desirable or necessary features should be included in reports if a primary feature is simplicity or clarity.

Results

Response rate. Overall response rate was very good (approximately 54%) given the rather short time allowed and the totally voluntary nature of the survey. Table 2 summarizes response rate by audience.

Table 2
Response Rate by Audience

Audience	Questionnaires Sent	Questionnaires Returned	Percent of Questionnaires Returned
Superintendents	24	10	42
Assistant Superintendents	20	7	35
Local Accountability Coordinators	24	7	29
Project Basic Facilitators	24	8	33
Other Administrators	40	24	33
Principals	105	64	60
Guidance Counselors	105	61	58
Teachers	400	219	55
Parents	200	99	55
Students	200	119	60
Total	1,142	618	54

As can be seen from Table 2, response rate was higher at the school level and lower at the district administrative levels. Furthermore, responses at the school level were fairly evenly spread throughout the state, while administrative responses were not. For these reasons, results pertaining to principals, guidance counselors, teachers, parents, and students can be confidently generalized to the state as a whole. Responses of district administrators are not directly generalizable unless considered all together. Even then they are somewhat idiosyncratic. With this caution in mind, we now turn to the tabulated results.

District administrators. Table 3 summarizes the responses of all district level administrators. These five groups (superintendents, assistant superintendents, Project Basic facilitators, local accountability coordinators and other administrators) have been combined because the response rate of each group was very low. The other administrators group was composed primarily of curriculum and content area supervisors. By combining all administrative groups, we hoped to stabilize the results.

Table 3
Responses of District Administrators
(N = 56; entries are percentages)

A. What information would be helpful in analyzing your district's performance on the Maryland Functional Tests? Please check all boxes that apply.

	For each school	For your district	For the state
Average Total Score	88	91	86
Average Domain Score	91	93	79
Average Objective Score	88	88	68
Item Scores	70	64	43
Strengths/Weaknesses			
Domains	80	71	54
Objectives	73	71	41
Items	55	54	27
Pass/Fail			
Total Test	93	96	80
Domains	93	88	64
Objectives	84	79	52
Past Performance			
Average Score	95	93	82
Number or Percent Passing	100	93	75
Number or Percent Failing	91	89	68

B. From your perspective, which of the following items of information about the Maryland Functional Tests should be included on the score report?

	Yes	No	Yes
1. Why the test was given	66	30	3
2. What the passing score was	98	0	1
3. Who will know about my district's performance	58	23	17
4. Resources and support available for those who perform poorly	66	23	10
5. Resources and support available for interpretation of the scores	82	12	5

Three points are immediately clear. First there was greater interest in local performance than in state performance. Second, there was major interest in information about past performance. Third, interest in performance was greatest at the highest level of generality (i.e., total score, pass/fail), slightly less at intermediate levels (i.e., domain), and least at the lowest level of generality (i.e., objectives, items).

With respect to Part B of Table 3, district administrators were primarily interested in knowing the passing score for each test and relatively less interested in other matters. There was great interest in remediation resources, however.

Principals. Responses of principals are summarized in Table 4. As with district administrators, the most appropriate way to interpret principals' responses is in relative terms.

Table 4
Responses of Principals
(N = 64; entries are percentages)

A. What performance would be helpful in analyzing your school's performance on the Maryland Functional Tests? Please check all boxes that apply.

	For your school	For your district	For the state
Average Total Score	84	78	70
Average Domain Score	81	65	56
Average Objective Score	81	65	54
Item Scores	82	56	46
Strengths/Weaknesses			
Domains	85	62	50
Objectives	87	62	48
Items	85	53	40
Pass/Fail			
Total Test	93	71	64
Domains	78	53	42
Objectives	73	46	40
Past Performance			
Average Score	90	73	62
Number or Percentage Passing	93	71	57
Number or Percentage Failing	87	64	50

Table 4 Continued

B. From your perspective, which of the following items of information about the Maryland Functional Tests should be included on the score report?

	Yes	No	Omit
1. Why the test was given	67	25	7
2. What the passing score was	98	0	1
3. Who will know about my school's performance	70	21	7
4. Resources and support available for those who perform poorly	85	9	4
5. Resources and support available for intepretation of the scores	90	6	3

There was a general progression in interest which was highest at the source (school), lower at the district level, and lowest at the state level. This phenomenon is understandable given the fact that principals have the greatest potential impact on future results at their own schools. Other trends parallelled those observed with district administrators; namely, greater interest in past performance, major interest in total test scores and domain scores relative to objectives and items, and intense interest in passing scores and available resources items (B2 and B5).

Guidance counselors. Responses of guidance counselors are summarized in Table 5. The method of interpretation used with other audiences is appropriate here as well.

Table 5
Responses of Guidance Counselors
(N=61; entries are percentages)

I.A. Listed below are six items that could appear on individual student test reports. Consider each and circle THREE (3) that you think are the most important FOR INDIVIDUAL STUDENT TEST REPORTS.

If you circle more than three, we cannot count your responses. You may circle fewer than three if you wish.

87	1.	Total score (e.g., reading, mathematics)
37	2.	Domain scores (e.g., number concepts, decimal operations, using data
20	3.	Objective scores (e.g., using information from tables, using information from graphs)
05	4.	Item scores
58	5.	Strengths and weaknesses
65	6.	Pass/Fail indicator

Table 5 Continued

B. Consider the types of SUMMARY INFORMATION shown below. Which would be useful to you? Check all boxes that apply.

	For your school	For your district	For the state
Average Total Score	82	68	63
Average Domain Score	73	55	47
Average Objective Score	52	38	28
Item Scores	52	35	25
Strengths/Weaknesses			
Domains	77	40	33
Objectives	57	33	30
Items	55	30	23
Pass/Fail			
Total Test	90	68	67
Domains	62	47	42
Objectives	45	38	26
Past Performance			
Average Scores	75	53	55
Number or % Passing	82	57	53
Number of % Failing	77	55	48

II. Which of the following ways of reporting student strengths and weaknesses is most helpful to you? (CIRCLE ONE ONLY)

20 A. Relative to the student's total score (e.g., one domain score is lower than you would have expected, given the student's total score)

68 B. Relative to the passing score (e.g., one or more domain scores are below a certain standard)

13 C. Relative to other students' scores (e.g., this student scored higher than the average student on one domain but lower on another)

III. Which of the following would you be willing to do in order to get more information about students' strengths or weaknesses at the objective level? (CIRCLE ALL THAT APPLY)

13 A. Give a longer test

50 B. Give a test that covers fewer objectives but covers each more completely

57 C. Give follow-up tests for low-scoring students

08 D. Other

The primary interests of guidance counselors were total score and pass/fail information (Part I.A.). Domain scores and information about strengths and weaknesses were secondary concerns. There was very little interest in objective scores (20%) or item information (5%).

As with principals, counselors were primarily interested in the students in their own schools and less so in other students in the district or state (Part I.B.). Major emphasis was on pass/fail information, though interest in total scores, past performance (% passing), and domain scores was relatively high.

The two questions on page 2 of the questionnaire yielded very helpful information. The vast majority of counselors (68%) preferred to view strengths and weaknesses in terms of some absolute standard (response B) rather than in normative terms (response C - 13%). In order to receive more detailed information about student performance on specific objectives, counselors were fairly evenly divided between a more focused test (response B - 50%) and follow-up tests for selected students (response C - 57%). Few would have given a longer test (response A - 13%).

Teachers. Responses of teachers are summarized in Table 6.

Table 6
Responses of Teachers
(N=219; entries are percentages)

Listed below are six items that could appear on individual student test reports. Consider each and circle THREE (3) that you think are the most important FOR INDIVIDUAL STUDENT TEST REPORTS.

I.A. If you circle more than three, we cannot count your responses. You may circle fewer than three if you wish.

65	1.	Total score (e.g., reading, mathematics)
53	2.	Domain scores (e.g., number concepts, decimal operations, using data, problem solving)
38	3.	Objective scores (e.g., using information from tables, using information from graphs)
18	4.	Item scores
56	5.	Strengths and weaknesses
38	6.	Pass/Fail indicator

B. Consider the types of SUMMARY INFORMATION shown below. Which would be useful to you? Check all boxes that apply.

	For Your School	For Your District	Total State
Average Total Score	76	68	66
Average Domain Score	70	48	40
Average Objective Score	63	41	30
Item Scores	62	30	26
Strengths/Weaknesses			
Domains	75	49	41
Objectives	74	41	28
Items	64	29	24
Pass/Fail			
Total Test	79	58	58
Domains	61	37	29
Objectives	61	30	22
Past Performance			
Average Scores	73	57	54
Number or % Passing	72	50	47
Number or % Failing	64	44	42

II. Which of the following ways of reporting student strengths and weaknesses is most helpful to you? (CIRCLE ONE ONLY)

Table 6 Continued

24 A. Relative to the student's total score (e.g., one domain score is lower than you would have expected, given the student's total score)

62 B. Relative to the passing score (e.g., one or more domain scores are below a certain standard)

13 C. Relative to other students' scores (e.g., this student scored higher than the average student on one domain but lower on another)

III. Which of the following would you be willing to do in order to get more information about students' strengths or weaknesses at the objective level? (CIRCLE ALL THAT APPLY)

15 A. Give a longer test

50 B. Give a test that covers fewer objectives but covers each more completely

71 C. Give follow-up tests for low-scoring students

13 D. Other

Teachers were primarily interested in individual students' total scores (Part I.A. item 1 - 65%). They were surprisingly less interested in pass/fail (38%) objectives (38%) or items (18%). Since objective information is traditionally the stuff of which diagnoses are made, let us turn our attention to information about strengths and weaknesses. In Part I.B., there appeared to be approximately equal interest in all four general areas (total score, strengths/weaknesses, pass/fail, and past performance). In short, teachers seemed to be moderately interested in everything but not greatly interested in any one feature of a potential report. But when forced to choose among these options (Part IA) teachers clearly favored generalities over specifics.

Turning to the questions on page 2 (II and III in Table 6), teachers agreed with counselors that strengths and weaknesses should be reported in

absolute terms (II. B - 62%). In order to receive more detailed objective information, 71% of teachers would give follow-up tests to students who fail the functional tests; 50% would give a test that covers objectives with more items per objective tested (response B). Only 15% would give a longer test.

Parents and students. Parents were most interested in their children's test scores (71%), whether they passed or failed (62%), and topics the child needed to study (62%). They were relatively uninterested in which questions their children missed (15%), parts of the test on which their children did well (26%), and comparisons of their children with other students (37%). The picture is fairly clear. Parents wanted to know, in very general terms, how their children performed. In more specific terms, they wanted to know whether their children passed or failed, and if they failed, how to pass the next time. There was little interest beyond this point.

Student responses were fairly similar to those of parents. They were primarily concerned with topics to study (65%), pass/fail information (63%), and total score (62%). They were less interested in domain scores (28%), objective scores (31%), and scores compared to those of other students (31%). Table 7 summarizes the responses of parents and students to all items.

Table 7
Questionnaire Responses of Parents and Students
(Entries are Percentages)

Statement	Parents (N = 99)	Students (N = 119)
1. A statement telling whether you (your child) passed or failed	62	63
2. Your (child's) total score for a test	71	62
3. Your (child's) scores on the domains tested	54	28
4. Your (child's) scores on the objectives tested	41	31
5. A list of the numbers of the questions you (your child) missed	15	35
6. Parts of the test on which you (your child) did well	26	41
7. Parts of the test on which you (your child) did poorly	56	60
8. Your (child's) score compared to other students' scores	37	31
9. Your (child's) score compared to the passing score	51	52
10. Topics you need (your child needs) to study	62	65

Results of Review of Capabilities

Score reporting has become a high-tech industry unto itself. We have become so accustomed to computer generated, laser printed, custom designed documents that we sometimes fail to consider the possibility that the technology is not universally available. Our review of Maryland's score report producing capability had two foci, machines and people.

At the time of the study, the MSDE had recently purchased a Hewlett Packard 2680A laser printer. Linked to a mainframe computer system (HP 3000 Model 64) the laser printer was capable of producing totally individualized score reports at the rate of about one per second. The HP laser printer prints a page image at a time in exactly the same way that a page of text and graphics would appear on the screen of a video display terminal and about as fast.

But who operates the machines? The HP laser printer presented a special challenge to the Program Assessment Branch of the MSDE because the printer must be programmed along with the computer that scores the tests. The language traditionally used for producing score report programs was different from that used in the new laser printer. Even if the MSDE had made no changes in their score reports, they would not have been able to produce them until someone bridged the language gap between the scoring programs and the printing programs. This was no small undertaking.

Summary

One consideration sometimes overlooked in the literature on score reporting is the fact that most score report recipients deal with more than one testing program. Some tests are diagnostic; some are for accountability, and some are for other purposes. Maryland users correctly identified the Functional Tests as being strictly associated with accountability. Their information needs and interests reflected this understanding. These users are probably not atypical of score report users in general. Given this fact, we designed forms that emphasized the accountability function of the tests but incorporated more than simple pass/fail information. After all, accountability is an ongoing responsibility, not just an annual event.

Designing the Reports

Given four levels of reporting and seven content areas, it was necessary to design 28 separate reports. For the sake of simplicity and continuity, the following presentation focuses on a single content area (reading) across four reporting levels (student, class, school, LEA).

Parents and Students

As noted previously, parents and students were primarily interested in total score, pass/fail information, and topics to study. Figure 1 presents a report for a fictitious student Mary L. Student. This report is reduced to 64% of its original size. The actual report is 8½ x 11 inches and the student's name is printed in 24-point bold type (¼ inch high). The narrative summary would have indicated which topics Mary needed the most help in if she had not passed.

A letter to parents describes the purpose of the tests and provides background related to interests expressed by students and parents in the survey. The description of reading domains is different from most. These descriptions are in terms of test questions, rather than instructional activities, again, in response to concerns of parents and students.

Figure 1

REPORT FOR: MARY L. STUDENT

SCHOOL/CODE: ALLEGANY HIGH 0606
DISTRICT/CODE: ALLEGANY COUNTY 01
GRADE: 9
DATE TESTED: FALL, 1984

SUBJECT: **READING LEVEL II** **PASSING SCORE IS 340**

YOUR TOTAL SCORE 350 PASS? YES

SUMMARY

YOU HAVE PASSED THE MARYLAND FUNCTIONAL READING TEST.
YOU SHOULD MAINTAIN YOUR SKILLS IN THE FOLLOWING AREA(S):

- Following Directions
- Locating Information
- Main Idea
- Using Details
- Understanding Forms

SEE THE INFORMATION BELOW FOR A MORE COMPLETE EXPLANATION OF THIS TEST.

TO THE PARENT:

Your child recently took the Maryland Functional Reading Test. The results are shown above. These tests are given to all Maryland students to determine whether or not they have acquired certain basic skills in reading, mathematics, writing and citizenship.

In 1972, the Maryland General Assembly passed the "Educational Accountability Act." To carry out this law, the State Board of Education established Project Basic, setting basic requirements for high school graduation. At the same time the State Board of Education established the Maryland Functional Testing Program. All Maryland public high school students must pass these tests in order to graduate from high school.

The State Board of Education set passing scores for each test after hearing from teachers, parents, and citizens concerned about the education of Maryland students. Students who do not pass the tests are given extra help in school and then are allowed to retake the tests they failed.

Each test covers one subject. Each subject is made up of several domains. Passing is based on total test score. Students do not pass or fail individual domains. Whether students pass or fail the test, they may still have strengths or weaknesses in one or more domains. These domains are described on this page in terms of the types of questions students might be asked. Additional information about the domains, the passing score, and how you can help your child do better in reading is available at your child's school.

READING DOMAINS

Following Directions: Given directions that are either pictures or words, the student will identify the proper course of action. Questions may include road signs, recipes, instructions for operating appliances, directions given in several steps, or similar items.

Locating Information: Given a reference or resource, the student will locate specified information. Questions may call for information located in tables of contents, indexes, footnotes, bibliographies, card catalogs, and similar locations.

Main Idea: Given a reading selection, the student will identify the main idea which may be either stated or implied. Questions may include passages from books, manuals, legal documents, newspaper articles, pamphlets, or similar sources.

Using Details: Given a reading selection, the student will locate and use details as directed. Questions may ask the student to list details in their proper order, to classify details, or to compare details.

Understanding Forms: Given a form or a portion of a form, the student will tell where certain information should go. Forms may include income tax forms, insurance forms, social security forms, job application forms, or similar forms.

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School Reports

School reports were designed for teachers and counselors. Because special instruction was to be provided for students who scored below a cutoff, the reports were designed to group students together. Note in Figure 2 that information not directly useful to teachers or counselors in dealing with this group is absent. Thus, for example, historical data are absent. A User's Guide was designed to describe the tests and their uses in detail. Thus, explanatory details are missing (cf. student/parent report).

Figure 2

SCHOOL REPORT FOR: ANY SCHOOL

DATE TESTED: FALL 1984
LEA/CODE: ALLEGANY COUNTY 01
AREA:

SUBJECT: READING
LEVEL: II
GRADE: 9

GROUP ONE: TOTAL SCORE 340 OR HIGHER		FOLLOWING DIRECTIONS		LOCATING INFORMATION		MAIN IDEA		USING DETAILS		UNDERSTANDING FORMS		TOTAL	
STUDENT NAME	STUDENT ID NO.	PERCENT CORRECT	SCALE SCORE	PERCENT CORRECT	SCALE SCORE	PERCENT CORRECT	SCALE SCORE	PERCENT CORRECT	SCALE SCORE	PERCENT CORRECT	SCALE SCORE	SCALE SCORE	PASS?
MARY DAYE	000001	65	341	68	335*	59	361	66	350	73	360	350	YES
GAIL LESH	000002	75	352	76	344	68	370	73	358	80	371	360	YES
HENRY SCHERICH	000003	84	368	83	354	78	381	80	368	88	387	372	YES
GROUP AVERAGE		74	351	75	342	69	372	75	363	80	371	359	
NUMBER NEEDING IMPROVEMENT		0		2		1		0		1			
PERCENT NEEDING IMPROVEMENT		0		10		5		0		5			

GROUP TWO: TOTAL SCORE BELOW 340		FOLLOWING DIRECTIONS		LOCATING INFORMATION		MAIN IDEA		USING DETAILS		UNDERSTANDING FORMS		TOTAL	
STUDENT NAME	STUDENT ID NO.	PERCENT CORRECT	SCALE SCORE	PERCENT CORRECT	SCALE SCORE	PERCENT CORRECT	SCALE SCORE	PERCENT CORRECT	SCALE SCORE	PERCENT CORRECT	SCALE SCORE	SCALE SCORE	PASS?
MICHAEL BUNCH	000011	29	304*	40	305*	30	335*	30	314*	42	326*	315	NO
WENDY LITTLEFAIR	000022	35	311*	49	313*	39	344	38	322*	50	334*	323	NO
RALPH [illegible]	000033	43	318*	55	320*	48	352	45	329*	58	342	331	NO
GROUP AVERAGE		[illegible]		36	314*	29	[illegible]	[illegible]		36			
NUMBER NEEDING IMPROVEMENT		6		8		14		11		7			
PERCENT NEEDING IMPROVEMENT		30		40		70		55		35			

*INDICATES NEED FOR IMPROVEMENT

Note that even among the group scoring above the cutoff, some students will need review or remediation. The "*" under Locating Information for Mary L. Student indicates such a need. On the Group Two Report, it becomes immediately obvious that Main Idea caused problems for most of the group. This section thus highlights group as well as individual needs.

Figure 3 illustrates the last page of a school report. This page summarizes all results and indicates general strengths and weakness. It may be used for classroom comparisons (e.g., my class vs. the rest of the school). Note that there is no class by class breakdown.

Figure 3

SCHOOL REPORT FOR: ANY SCHOOL

DATE TESTED: FALL 1984
LEA/CODE: ALLEGANY COUNTY 01
AREA:

SUBJECT: READING
LEVEL: II
GRADE: 9

	FOLLOWING DIRECTIONS		LOCATING INFORMATION		MAIN IDEA		USING DETAILS		UNDERSTANDING FORMS	
	PERCENT CORRECT	SCALE SCORE	PERCENT CORRECT	SCALE SCORE	PERCENT CORRECT	SCALE SCORE	PERCENT CORRECT	SCALE SCORE	PERCENT CORRECT	SCALE SCORE
SCHOOL AVERAGE: ALL STUDENTS	72	349	69	339*	86	395	59	342	87	385
NUMBER NEEDING IMPROVEMENT	6		10		15		11		8	
PERCENT NEEDING IMPROVEMENT	15		25		38		28		20	

NUMBER OF STUDENTS TESTED:	40
NUMBER OF STUDENTS PASSING:	20
PERCENT OF STUDENTS PASSING:	50

School Summary Report

Building level administrators wanted LEA comparison as well as historical data. The main feature of Figure 4 is that it contains very few numbers. Nothing appears that was not requested by most principals. The result is that principals can immediately check this year's results against last year's and against the other major benchmark of success, the competition. Yet in this report, there is no school-by-school breakdown. We discovered a balance between no comparative data at all and the kinds of invidious comparisons one customarily finds in the local newspapers.

Figure 4

PRINCIPAL COPY

SCHOOL SUMMARY REPORT FOR: ANY SCHOOL

DATE TESTED: FALL 1984 SUBJECT: READING LEVEL: II GRADE: 9

SCHOOL - LEA COMPARISON

	STUDENTS TESTED	FOLLOWING DIRECTIONS		LOCATING INFORMATION		MAIN IDEA		USING DETAILS		UNDERSTANDING FORMS		TOTAL	
		PERCENT ABOVE 340	MEAN SCORE	PERCENT ABOVE 340	MEAN SCORE	PERCENT ABOVE 340	MEAN SCORE	PERCENT ABOVE 340	MEAN SCORE	PERCENT ABOVE 340	MEAN SCORE	PERCENT PASSING	MEAN SCORE
SCHOOL	40	55	349	50	339	70	395	50	342	63	385	50	341
LEA	240	50	340	70	379	60	365	50	340	60	372	50	340

SCHOOL PERFORMANCE BY YEAR*

	STUDENTS TESTED	FOLLOWING DIRECTIONS		LOCATING INFORMATION		MAIN IDEA		USING DETAILS		UNDERSTANDING FORMS		TOTAL	
		PERCENT ABOVE 340	MEAN SCORE	PERCENT ABOVE 340	MEAN SCORE	PERCENT ABOVE 340	MEAN SCORE	PERCENT ABOVE 340	MEAN SCORE	PERCENT ABOVE 340	MEAN SCORE	PERCENT PASSING	MEAN SCORE
1984	40	55	349	50	339	70	395	50	342	63	385	50	341
1983	38	50	341	50	338	60	365	50	340	60	361	46	336
1982	42	55	350	50	337	50	345	43	328	54	346	42	327

*INITIAL FALL DATA ONLY

Principals were content to know where their schools stood relative to other schools in general. If they were below average, it helped to know they had improved over last year. If they were below average and posted a decline from last year's results, they knew they would have some explaining to do. The accountability function was served in a way that all parties understood and accepted, even when the results were unpleasant.

LEA Reports

Two LEA reports were designed, reflecting the different information needs of program managers (local accountability coordinators) and general administrators and elected officials (superintendents, assistant superintendents, school board). The LEA Report is a school by school summary for the local accountability coordinator. The LEA Summary Report parallels the School Summary report by providing LEA/state comparisons and historical data.

Figure 5 shows the LEA Report. Here we see the percent passing and mean score for each school in the district. The date and name and level of the test are shown as well as numbers of students tested. The local accountability coordinator (LAC) is responsible for assuring that each school performs up to standard. This person also needs to know where major weaknesses lie, either in specific domains across schools or in specific schools across domains. This report satisfies those needs.

Figure 5

LAC COPY

LEA REPORT FOR: ALLEGANY COUNTY

DATE TESTED: FALL 1984 SUBJECT: READING LEVEL: II GRADE: 9

SCHOOL NAME	CODE	STUDENTS TESTED		FOLLOWING DIRECTIONS	LOCATING INFORMATION	MAIN IDEA	USING DETAILS	UNDERSTANDING FORMS	TOTAL
ANY SCHOOL	0613	40	% PASSING	55	50	70	50	63	50
			MEAN SCALE SCORE	349	339	395	342	375	341
MY SCHOOL	0614	61	% PASSING	48	80	50	51	55	51
			MEAN SCALE SCORE	331	396	340	340	359	340
YOUR SCHOOL	0615	96	% PASSING	51	67	63	48	61	51
			MEAN SCALE SCORE	342	361	368	339	370	342
LEA TOTAL			% PASSING	50	70	60	50	60	50
			MEAN SCALE SCORE	340	379	365	340	372	340

NUMBER OF STUDENTS TESTED: 240
NUMBER OF STUDENTS PASSING: 120
PERCENT OF STUDENTS PASSING: 50

In Figure 6 we see a sample LEA Summary Report. Again we see comparisons to the larger system (state) and with previous years. There is very little detail here; for example, the school by school comparisons are missing. Yet the superintendent (who receives this report) does have access to another report which provides these comparisons if they are needed. Further, the superintendent is given concrete evidence for presentations to the school board

and ultimately to local media, and in very concise fashion. An all important context is provided for interpretation and discussion. The LEA State comparison invites discussions of local vs. state average per-pupil expenditures and the like. The LEA State comparison invites discussions of local vs. state average per-pupil expenditures and the like. The-LEA performance by year provides a framework for discussing changes in policies and programs over the past three years. In both cases, the discussion is clearly framed and may proceed in a productive manner. Contrast this situation with the unadorned "Half of County Flunks Test" headline seen some years ago in a

Figure 6

SUPERINTENDENT COPY

LEA SUMMARY REPORT FOR: ALLEGANY COUNTY

DATE TESTED: FALL 1984 SUBJECT: READING LEVEL: II GRADE: 9

LEA-STATE COMPARISON

	STUDENTS TESTED	FOLLOWING DIRECTIONS		LOCATING INFORMATION		MAIN IDEA		USING DETAILS		UNDERSTANDING FORMS		TOTAL	
		PERCENT ABOVE 340	MEAN SCORE	PERCENT ABOVE 340	MEAN SCORE	PERCENT ABOVE 340	MEAN SCORE	PERCENT ABOVE 340	MEAN SCORE	PERCENT ABOVE 340	MEAN SCORE	PERCENT PASSING	MEAN SCORE
LEA	240	50	340	70	379	60	365	50	340	60	372	50	340
STATE	65,385	51	340	56	351	55	349	57	359	54	349	53	347

LEA PERFORMANCE BY YEAR*

	STUDENTS TESTED	FOLLOWING DIRECTIONS		LOCATING INFORMATION		MAIN IDEA		USING DETAILS		UNDERSTANDING FORMS		TOTAL	
		PERCENT ABOVE 340	MEAN SCORE	PERCENT ABOVE 340	MEAN SCORE	PERCENT ABOVE 340	MEAN SCORE	PERCENT ABOVE 340	MEAN SCORE	PERCENT ABOVE 340	MEAN SCORE	PERCENT PASSING	MEAN SCORE
1984	240	50	340	70	379	60	365	50	340	60	372	50	340
1983	245	50	339	60	368	55	350	50	341	56	351	50	340
1982	247	41	328	55	350	45	337	50	340	52	345	46	336

*INITIAL FALL DATA ONLY

Conclusions

None of these reports contains a great deal of information. No information below the domain level is given in any of them. The student report contains a description of the domains from an item perspective. Higher levels of reporting are backed up by a series of documents including the Declared Competencies Index (DCI) and a User's Guide. The DCI describes each domain and objective in detail, while the User's Guide offers aid in interpretation and use of results.

Each report is oriented to a specific audience. Each report therefore contains only that information the recipient has shown a need to have. While not every item on every report was specifically requested by its users, each enhances the usefulness of the report for some important purpose described by users. Thus, for example, while parents did not specifically ask to know the name and level of the test, such information is absolutely crucial in a state where parents may recieve two or three sets of results in a given school year. More importantly, the specific items requested by parents, teachers, and others are there, an acknowledgement of the rightful ownership of the testing program.

The score reports presented in Figures 1-6 would not score very many points on the checklist devised by Mills and Hambleton (1984). So how do these reports differ from the dozens of others we reviewed?

First, visual clutter is reduced to an absolute minimum. Particularly for students and parents, the most important items of information are in large bold type and only two numbers (Passing Score and Your Total Score) ever appear (the Writing Level II report contains four numbers).

Second, diagnostic information is given all the attention it deserves, and no more. There is just so much information one can squeeze out of fifty or sixty test items. Users and designers agree that this test is primarily an

accountability test, not a diagnostic test. The limited amount of diagnostic information available is reported only where it is likely to be helpful: on the reports to teachers. These same teachers are given excellent support materials to perform their own more detailed diagnoses if they so desire.

This gives rise to the third point. A system has been designed around these reports in such a way that all pieces interlock and support one another. The User's Guide provides thorough background on score interpretation at multiple levels. The Declared Competencies Index defines each objective in great detail. A series of cross-referenced manuals, guides, and handbooks gives samples of instructional as well as diagnostic activities. The larger structure of Project Basic, whose objectives are assessed by the functional tests, provides for interpreting results and for setting new goals within a framework familiar to anyone associated with a Maryland school.

This score reporting system recognizes the responsibilities and information needs of all its audiences. Consider the following statements taken directly from the student and school reports:

You need to improve your skills in using details.

* Indicates need for improvement

From student to superintendent, all have some degree of responsibility for improving basic skills. Those responsibilities are acknowledged and relevant information is articulated in a way that helps each meet his or her own responsibilities.

References

Haenn, J.F., Bunch, M.B., and Mengel, C.W., Effective score reporting of non-norm-referenced assessment. Paper presented at the annual meetings of the American Educational Research Association, New Orleans, April 1984.

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